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FRIDAY, JUNE 22, 1883.

THE ROYAL SOCIETY OF CANADA.

THE Royal society of Canada held its second annual meeting in the Parliament house at Ottawa on May 22-25, under the presidency of Dr. J. W. Dawson. This society was organized, as our readers may know, a year since, under the auspices of the governor-general of Canada, the Marquess of Lorne, and includes four academies or sections, each with twenty members and a sectional president or chairman. These sections are as follows : I. French literature, history, etc. ; II. English literature, history, etc. ; III. Mathematical, physical, and chemical sciences ; IV. Geological and biological sciences. Their presiding officers for the past year were respectively, J. M. Lemoine, Daniel Wilson, T. Sterry Hunt, and A. R. C. Selwyn ; the general officers of the society being, J. W. Dawson, president ; P. J. O. Chauveau, vice-president ; J. G. Bourinot, honorary secretary ; and J. R. Grant, honorary treasurer.

There was a good attendance, about two-thirds of the members being present, besides which were numerous delegates from various local literary and scientific societies throughout the Dominion. These, by the rules of the Royal society, are entitled to appoint each year a delegate to attend the annual meeting, and present a report of their work and progress. In addition to these, various foreign societies were invited to send delegates ; in response to which, Dr. T. Sterry Hunt had been charged to represent the National academy of sciences, and Professor Alpheus Hyatt came in behalf of the American academy of Boston. The Institut of France had appointed Mr. Xavier Marmier, of the Academie française, their delegate ; and the French government had offered to send him at the expense of the state, but sudden illness prevented his presence.

After organizing in general session on Tuesday, the society at once divided into its four sections, and proceeded to the reading and discussion of papers, to which were devoted the first two days, with the exception of Wednesday morning. This was set apart for the pub-

lic exercises of the whole society, which then assembled in the Senate chamber of the Parliament house, the Marquess of Lorne and the Princess Louise being present. The Marquess, to whose zeal for the advancement of letters and science the inception of the society is due, made an address of welcome, congratulating the society on the success which had attended its first year's work. He informed them that the Queen had been graciously pleased to accord to it the title of the Royal society of Canada ; that Parliament had granted it an act of incorporation, and, moreover, voted an annual sum of five thousand dollars for the publication of its proceedings and transactions.

After pointing out the examples of munificence shown in the encouragement of science by the federal and state governments of the United States, he gave much advice as to the future conduct of the new society, all of which was characterized by the eminent good sense and practical wisdom which distinguishes him. He urged the members of the society to sink all sectional differences and distinctions of province, creed, or race, and aim only at a higher standard of excellence in letters and in science.

Dr. J. W. Dawson then gave his address as president. After a review of the work already done in letters and science in the Dominion, he spoke of the desirableness of a great national museum at Ottawa, and then proceeded to speak in eloquent words of the mutual relations of letters and science. We take the following extract from a report in the *Montreal gazette* of principal Dawson's speech :—

"In conclusion, he referred to the connection of science with literature. The two departments were in this society intimately associated, the literary sections being in some sense scientific as well. Science has a literature of its own, great and increasing, which competes with history and fiction for the popular eye and ear. Nature, rather than art, is the foundation of the best literature. It is on this, rather than on the graces of composition, or the tricks of style, or the flowers of imagination, that enduring literary fame must be built. This is especially the case in a country where history has been and will be marked out by its physical features and resources, and where our real poetry is that of our great rivers

and vast lakes, our boundless plains, our forest solitudes and changeful climate. These are unwritten poems, which have impressed themselves on the minds of our people more than any thing man has yet said or done; and he who most truly interprets them will build up the most lasting fame. For this reason he rejoiced that the society embraced both literature and science; and he was profoundly convinced, that it was for the highest interest of Canada, that, while its scientific men should be men of culture, its literary men should be men of scientific knowledge and scientific habits of thought."

Dr. Chauveau, the vice-president, followed in a brief discourse in French on the progress of both French and English letters in Canada, after which Mr. Louis Frechette, the well-known poet and laureate of the French Academy, recited with much grace and feeling a poem on The discovery of the Mississippi.

On Thursday, the Queen's birthday, the morning was given to a business-meeting of the society, after which the members and delegates were entertained at lunch by the governor-general at Rideau Hall, and were subsequently received by the princess at a garden party. Friday morning was devoted to receiving reports, the election of officers, and other business. In sections I. and III., Messrs. Louis Frechette and J. B. Cherriman were chosen chairmen in place of J. M. Lemoine and T. Sterry Hunt. Dr. Dawson, the president, having declined re-election, Dr. P. J. O. Chauveau, the vice-president, was elected in his place as president of the society, and Dr. T. Sterry Hunt as vice-president, for the ensuing year.

It would be foreign to our purpose to give an account of the communications on literary and historical subjects which were presented to the first and second sections of the society during the meeting. One of these, however, which, on account of its especial interest to the society at large, was by request read in general session, deserves notice. This was a paper by Dr. Alpheus Todd, librarian of Parliament, on the relation of the new royal society, and of similar societies, to the state, and was replete with valuable information and suggestions. He sketched the history of the Royal society of arts of Jamaica, which is there doing an important work, and then gave an account of the Royal society of New South

Wales, a colony which has already made great advances in all matters relating to intellectual progress. That country, we were informed, now numbers about a hundred literary and scientific societies, or 'one to every one hundred and fifty adult males of the population.' A government astronomical observatory, a geological survey, a botanic garden, a gallery of fine arts, and a free public library, the latter under the direction of the minister of public instruction, are among the evidences of the enlightened educational policy of this colony; and to crown the whole we have the Royal society of New South Wales, which aspires to lead the scientific movement of the country, and to give aid and direction to all its various scientific and literary institutions.

Dr. Todd then proceeded to review the history of the Royal society of London with especial reference to its present important position in relation to the state. This body, which has, moreover, considerable revenue of its own, has now for more than a third of a century received from the imperial government an annual grant of one thousand pounds, to be employed in aid of scientific research at the discretion of the president and council of the society, — an amount which, since 1876, has been augmented to from four to five thousand pounds annually, without counting special grants for astronomical and other investigations conducted under the auspices of the Royal society. To it was intrusted the organization of the Challenger expedition. The Weather bureau, moreover, with its annual expenditure of fifteen thousand pounds, originally under the Board of trade, is now conducted by a commission appointed by the crown on the nomination of the president and council of the Royal society. This disposition of the British government to place the scientific work of the nation under the control of its Royal society is an example already imitated by New South Wales, and one which will, it is hoped, be followed by the government of the New Dominion. Dr. Todd did not allude to the National academy of sciences of the United States, one object in the creation of which was the establishment of a body to serve as scientific aids and councillors to the federal government, — a function which they have efficiently discharged on many occasions with vast advantage to the state. The United States Congress has, however, thus far in its relations to the National academy, failed to imitate the wise generosity of the British parliament, or even that of the Dominion parliament to its newly formed Royal society.

Among the papers in section III. may be mentioned one by Professor McGregor of Halifax, on the variation of the polarization of electrodes with their difference of potential; one by Professor Dupuis of Kingston, on the construction of a sidereal clock to show mean time; and one by Capt. Deville of Ottawa, on the measurement of terrestrial distances by astronomical observations, in which he proposes to employ the difference of azimuths instead of the difference of latitudes. Mr. Baillargé of Quebec contributed papers on some problems in hydrographic surveying, and on suggestions for a new edition of Euclid.

Dr. Harrington of Montreal gave a description, with analyses, of two rare minerals now found for the first time in Canada,—meneghinite and tennantite; and Dr. Ellis of Toronto described telluric gold-ores found on Lake Superior, exhibiting tellurium extracted therefrom; he also gave an analysis of a remarkable sulphur-water found near Port Stanley, Ontario, and described certain applications of Löwenthal's method for the determination of tannin. This was followed by an account, by Mr. Thomas Macfarlane of Montreal, of certain unexpected reactions attending the decomposition of sodium sulphate by carbon.

In the second day's session, Mr. Sandford Fleming discussed the question of a universal meridian for the regulation of time; after which, reports were presented of the observations made, at various points throughout the dominion, of the late transit of Venus, successful observations being reported from Cobourg, Ottawa, Kingston, and Winnipeg.

Professor Haanel of Cobourg described at length his ingenious mode of blowpipe-testing by means of hydriodic acid, and subsequently, in an evening session, gave experimental demonstrations of its application. His process depends upon the conversion of the various metals into volatile iodides, which are condensed on plates of plaster of Paris, and, by their different colors and subsequent behavior, are found to afford ready means of identifying and distinguishing, at a single operation in many cases, several elements in a mineral compound. Mr. Gisborne read a paper giving an account of recent progress in telegraphy, and Mr. Macfarlane described some interesting phenomena of double decomposition presented in the reaction between sodium chloride and zinc sulphate. This was followed by a paper by Dr. T. Sterry Hunt on the mechanical transfer of matter in the process of segregation, as shown in mineral masses,—a phenomenon which, in the discussion following, was shown by Mr.

Thomas Macfarlane to be well illustrated in the concentration which occurs in the process of kernel-roasting of cupriferous pyrites.

In section IV., Dr. Selwyn of the Geological survey of Canada read a paper on some features in the geology of Lake Superior, most of the points of which have lately been discussed by himself and others in the pages of SCIENCE. At a subsequent meeting a discussion of this paper took place, Messrs. Bell, Macfarlane, Sterry Hunt, and J. W. Dawson taking part therein, and contesting many of the views of the author. Principal Dawson presented a paper on spores and spore-cases from the Erian rocks, of which an abstract will be found in our weekly summary, under Botany. A detailed study of the distribution of the subdivisions of the carboniferous rocks in the maritime provinces was communicated by Mr. E. Gilpin, jun.; and Dr. G. M. Dawson described the triassic rocks of the western parts of the dominion. Dr. Robert Bell gave an account of the soils of the Canadian north-west territory, an abstract of which appears farther on, under Physical geography. An interesting discussion followed the reading of this paper, in which Professor Macoun and Dr. J. W. Dawson took part. Dr. T. Sterry Hunt made a communication entitled 'Studies of serpentine rocks,' in which, after sketching the history of opinions for the past century as to the origin and geognostical relations of serpentine, he proceeded to describe the modes of its occurrence in various parts of Europe and North America, particularly noting the serpentines of Pennsylvania and those of the vicinity of New-York City, including Staten Island. He also presented a memoir on the question of the Taconic system in geology. Prof. L. W. Bailey gave an interesting account of Indian remains found in the province of New Brunswick.

The foregoing list of papers presented to the scientific sections of the society is unavoidably incomplete and imperfect, communications having been made, among others, by Prof. E. J. Chapman of Toronto, and Dr. J. R. Grant and Professor Macoun of Ottawa; to which should be added a paper by Mr. G. F. Matthew of St. John, N.B., in continuation of his studies on the trilobitic fauna of the Cambrian rocks of that locality, with numerous figures. It is understood that the various memoirs presented to the society, both at this meeting and at its first organization a year since, will soon be published in the form of transactions, in quarto, with suitable illustrations, making what we trust will be the first of a long series of Transactions of the Royal society of Canada.